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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,157	12/23/2005	Eiju Suzuki	Q92027	6585

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EXAMINER	
TESKIN, FRED M	

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1796	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,157	SUZUKI ET AL.	
	Examiner	Art Unit	
	Fred M. Teskin	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,11 and 13-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,11 and 13-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

This Office action follows a reply filed on December 28, 2007. Per the reply, claims 1 and 8 have been amended, claims 9-10 and 12 have been cancelled and new claims 17 and 18 added. Thus, claims 1-8, 11 and 13-18 are currently pending and under examination.

The amendments made to claim 8 have resulted in withdrawal of the following rejections: (I) claims 8 and 9 under Section 102(b) as anticipated by Pedretti *et al* and (II) claims 8-12 under Section 103(a) as unpatentable over Sylvester *et al*.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 8, 11, 17 and 18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Specifically, the specification is nowhere found to provide adequate basis for the negative limitation added to claim 8 (from which claims 11, 17 and 18 depend), *viz*., "polymerization method except a vapor-phase polymerization ...." In fact the application disclosure contains no reference to exclusion or inclusion of vapor-phase polymerization from the described method. Consequently, the application claims could not have

referred to the use of vapor-phase polymerization for any purpose, and thus its exclusion from the scope of the claims in order to distinguish over the prior art of Sylvester *et al* is deemed to be (i) completely arbitrary in nature and (ii) not supported in the original disclosure. In other words, the concept of explicit exclusion of a certain type of polymerization cannot properly be said to be inherent in a lack of disclosure of the concept of the explicit inclusion of such. Thus, while it is true that applicants' working examples describe solution polymerization conditions and contain no reference to vapor-phase polymerization, the mere absence of a positive recitation is not basis for an exclusion; see MPEP 2173.05(i).

Claims 1-7 stand rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pedretti *et al.*

The basis of the rejection is adequately set forth in the prior Office action (at p. 3), and that explanation is incorporated herein by reference.

Claims 13-16 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Pedretti et al applied to claims 1-7 above, in view of US 6046266 (Sandstrom *et al*).

The basis of the rejection is adequately set forth in the prior Office action (at p. 4), and that explanation is incorporated herein by reference.

Applicants' arguments filed December 28, 2007 with respect to Pedretti *et al* and Sandstrom *et al* have been fully considered but are not persuasive of error in the repeated rejections.

Applicants traverse the rejections, arguing (I) that the calculation method used by Pedretti *et al* is entirely different from that of the present invention and (II) that in the synthesis conditions of Pedretti *et al*, the cis content is less than 98% as calculated by the equation (IV) according to the present invention.

To respond: As to point (I), it is signifcant that the claims to which Pedretti *et al* is applied are all drawn to products (butadiene-based polymer and rubber composition) and not to a method of calculating cis-1,4 and vinyl bond contents. As noted in the prior action, in at least Examples 18, 19, 23, 25, 26, 29, 39 and 40 of Pedretti *et al,* butadiene polymers were prepared by solution polymerization at the same polymerization temperature (not higher than 25°C) and using the same catalyst components as applicants. Thus, although Pedretti *et al* do not teach a calculation method employing the equations recited in present claim 1, the issue remains as to whether the polymers of the cited examples inherently possess a cis-1,4 content and vinyl bond content of not less than 98.0% and not more than 0.3%, respectively. However, given the correspondence in polymerization conditions, examiner maintains that the burden is on applicants' to show that the properties recited in the claims represents an unobvious difference. *In re Best*, 195 USPQ 430 (CCPA 1977). And while applicants in point (II) assert that under the synthesis conditions of Pedretti *et al*, the cis content is less than 98% as calculated by equation (IV) in claim 1, applicants have submitted no objective

evidence to support the assertion nor specifically identified any evidence already of record establishing such to be the case. Argument of counsel cannot take the place of evidence in the record, *In re Pearson*, 181 USPQ 641, 646 (CCPA 1974).

Accordingly, the continued rejections are still deemed tenable and therefore must be maintained.

Claims 8, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6136931 (Jang *et al*).

Jang *et al* disclose a process for producing polybutadiene with high cis-1,4-content, the process comprising the step of polymerizing 1,3-butadiene in a non-polar solvent using a catalyst that is previously prepared by aging a mixture of (a) a neodymium compound, (b) an organoaluminum compound and (c) a boron trifluoride complex represented by a defined formula I, in the presence or absence of a small portion of conjugated diene compound (see col. 2, ll. 32-55). Patentees' components (a), (b) and (c) are seen to correspond to applicants' (A), (B) and (C) components as defined in claim 8. Thus the patentees' component (c), for example, qualifies as a species of the Lewis acid member of the (C) component as claimed. Further, the patentees working examples demonstrate polymerization of 1,3-butadiene using a catalyst generated by an aging process utilizing neodymium versatate (a branched carboxylate within claims 17 and 18), 1,3-butadiene, triisobutylaluminum and boron trifluoride-diethylether, see Examples 1-13 and Table 1 in column 4. Polybutadienes produced according to Examples 7 and 11-13 each have a cis-1,4 content (%) of

greater than 98.0 (see Table 3 in col. 5). The exemplified polymerizations were performed at a polymerization temperature outside the claimed range, *viz.*, 40°; however, Jang *et al* positively teach the polymerization temperature is preferably room temperature to 100°C (see cols.3- 4, bridging paragraph), which range overlaps the temperature range recited in present claim 8.

In cases involving overlapping ranges, such as the present case, it has consistently been held that even a slight overlap in range establishes a *prima facie* case of obviousness; see, e.g., *In re Woodruff*, 16 USPQ2d 1936 (claimed invention rendered obvious by prior art reference whose disclosed range ("about 1-5% carbon monoxide") abutted the claimed range ("more than 5% to about 25%" carbon monoxide) and *In re Geisler*, 43 USPQ2d at 1365 (acknowledging that claimed invention rendered *prima facie* obvious by prior art reference whose disclosed range (50-100 Angstroms) overlapped the claimed range (100-600 Angstroms)). Accordingly, in the present case it would have been obvious to one of ordinary skill in the art to modify the Jang *et al* process by conducting the polymerization at room temperature, e.g., 20°C as per claim 8, and reasonably expect to obtain comparable results.

Applicants' arguments filed December 28, 2007 with respect to claim 8 have been fully considered, but are deemed moot in view of the new ground of rejection applied to claims 8, 17 and 18.

No claims are in condition for allowance at this time.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner F. M. Teskin whose telephone number is (571) 272-1116. The examiner can normally be reached on Monday through Thursday from 7:00 AM - 4:30 PM, and can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (571) 272-1114. The appropriate fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Fred M Teskin/

Primary Examiner, Art Unit 1796